

AMENDMENTS TO THE SPECIFICATION

Please amend paragraphs 0030-0081 of the Specification as follows:

[0030] Expediently, as specified in claim 2, said apparatus may be designed with means for sensing and registering of a normally occurring muscle activity.

[0031] Hereby it is achieved that the apparatus will be aware of said normally occurring muscle activity that may be utilized as a reference value when laying down criteria for triggering of a feedback signal, whereby the danger of having an erroneous feedback can be reduced or even prevented completely.

[0032] In accordance with a particular expedient embodiment as specified in claim 3, said apparatus may be designed with means for sensing and registering of an essentially maximal muscle activity, for example a maximal jaw clenching activity.

[0033] Hereby it is achieved that that a measure is registered corresponding to the level of the muscle activity, e.g. the chewing force for the user in question, whereby this level may be taken into consideration when laying down criteria for triggering of a feedback signal. Hereby, an unseen high degree of user friendliness may be achieved.

[0034] In accordance with a further expedient embodiment as specified in claim 4, said apparatus may be designed for sensing and registering of muscle activity during one or more predefined normally occurring muscle activities, such as one or more grimaces.

[0035] Hereby it is achieved that muscle activities that may be expected to occur normally, are registered by the apparatus, which may be utilized when laying down criteria for triggering, whereby these normally occurring activities can not in themselves trigger a feedback signal.

[0036] In accordance with a further expedient embodiment, as specified in claim 5, said

apparatus may comprise means for registering and storing muscle activity during a time interval.

[0037] Hereby it is achieved that the level of activity and possibly patterns of activity can be registered while the user is wearing the apparatus, for example for a relatively long period and/or for several periods of time, whereby reference values etc. can be established with a higher degree of certainty and accuracy. Thus, also criteria for triggering the feedback may be established with greater certainty and accuracy.

[0038] Advantageously, as specified in claim 6, said apparatus may be designed to be individually adaptable by having means for adjusting said feedback signal.

[0039] Hereby it is achieved that that the individual user may adjust and set the feedback signal, e.g. a vibration, an electric signal, or another form of stimulus to a level that will be suitable to the user, e.g. a level that will not be uncomfortable to the user but that may clearly be sensed/felt/heard etc.

[0040] In accordance with a particular expedient embodiment, as specified in claim 7, said means for processing of said signals in order to detect a particular activity may comprise means for pattern recognition, e.g. using FFT (Fast Fourier Transform) analysis.

[0041] Hereby an even higher degree of certainty is achieved when detecting undesired muscle activities since patterns of activity registered in advance can be utilized for establishing criteria for triggering of feedback.

[0042] Expediently, as specified in claim 8, said means for providing signals indicative of muscle activity may comprise one or more electrodes for sensing of EMG-signals.

[0043] Hereby it is achieved that said muscle activities can be sensed and registered in a certain and advantageous manner.

[0044] Advantageously, as specified in claim 9, said means for providing signals indicative of muscle activity may comprise one or more electrodes for sensing of EEG-signals (Electroneurographic signals).

[0045] Hereby a further increased certainty may be achieved when a feedback signal is triggered since said EEG signals can provide further information for establishing of criteria for triggering. For example when bruxism is concerned where it is known that bruxism in most cases occurs in certain phases of sleep that may be detected by means of EEG signals.

[0046] In accordance with a further advantageous embodiment, as specified in claim 10, said apparatus may comprise means for testing of said electrodes and in particular the connectivity to the user by supplying a test voltage to the electrode(s), possibly as a superimposed voltage, measuring of a resulting signal and comparing the resulting current with reference value(s).

[0047] Hereby it can be assured that e.g. the user has placed the electrodes in such a manner that the resistance to the skin is below a certain value that allows the apparatus to perform without flaws. In this manner the user may initially be confirmed that the apparatus is operational when the user has placed the apparatus e.g. on the forehead and further, the electrode connectivity may be monitored periodically or continuously whereby it is detected if the connectivity falls below the prescribed range, in which case the user may be alerted and/or the operation of the apparatus may be stopped, possibly temporarily.

[0048] Preferably, as specified in claim 11, said means for providing signals indicative of muscle activity may comprise a microphone, a sensor for sensing of vibrations and/or other sensor means.

[0049] Hereby it is achieved that that signals may be registered in various manners that may be adapted to the particular purpose and that further combinations of such means may

be used.

[0050] In accordance with a further advantageous embodiment, as specified in claim 12, said apparatus may comprise means for storing data corresponding to measured and/or processed signals.

[0051] Hereby it is achieved that data corresponding to a number of sessions, e.g. nights, may be preserved and used for e.g. statistical purposes and for assessing the improvement of e.g. user behaviour, bruxism events etc. and possibly for redefining the settings of the apparatus, for example when the user returns to a supervisor or the like.

[0052] Preferably, as specified in claim 13, the apparatus may comprise means for transferring stored data to a computer, e.g. a PC or the like, which may take place at a supervisor or at the user's own PC.

[0053] Further, such data may be sent via the Internet to e.g. a supervisor for evaluation and use.

[0054] In accordance with a still further advantageous embodiment, as specified in claim 14, said apparatus may be operated in a set-up mode and a use-mode, that in said set-up mode individual reference signals, signals corresponding to specific individual muscle activities and individual bio-feedback signal characteristics may be set-up, and that in said user mode the device may monitor muscle activity and provide bio-feedback in accordance with predefined rules and settings.

[0055] Hereby, the settings of the apparatus may be established in an advantageous manner. For example may the setting up be performed under supervision of a skilled and trained person, e.g. a supervisor, a dentist or the like that may lead the potential user through the procedure and may assure that the setup is performed successfully. After the setup procedure has been performed, the supervisor may put the apparatus in the use-mode,

whereby the apparatus may be operated safely and in an uncomplicated manner by the user.

[0056] According to a preferable embodiment ~~as specified in claim 15~~, said apparatus may comprise a user module for wearing on the head, e.g. on the forehead, on or in the ear, etc.

[0057] Hereby it is achieved that that apparatus may be designed conveniently, e.g. with electrodes that may readily monitor e.g. the muscle Temporalis, and in such a manner that the apparatus may be located unobtrusively, which will be preferable if the apparatus is to be worn during sleep.

[0058] According to a further advantageous embodiment, ~~as specified in claim 16~~, said device may comprise a slave module and a master module, said slave module being designed for wearing by a human being.

[0059] Hereby it is achieved that the part that has to be worn by the user may be miniaturized as much as possible since components for e.g. signal processing etc. may be placed in the master module.

[0060] Preferably, ~~as specified in claim 17~~, said apparatus may comprise charging means, e.g. for said user module or for said slave module.

[0061] According to a particularly advantageous embodiment, ~~as specified in claim 18~~, said apparatus may comprise means for indicating operating steps to a user such as visual means, e.g. a LED, or acoustic means.

[0062] Hereby the user may in an expedient manner receive instructions regarding the apparatus, e.g. regarding the on/off status, regarding the level of the feedback when this is adjusted etc. Further it is noted that when the apparatus is worn on the head, e.g. on the forehead, a light indicator in the form of e.g. a two- or three colour LED may be particular

advantageous since the user may be aware of the light, colour, frequency etc even when the apparatus is worn and even at night.

[0063] According to further advantageous embodiment, as specified in claim 19, said apparatus may comprise display means for displaying instructions and/or results stemming from a monitoring session and/or a number of sessions.

[0064] Such display means may preferably by use of words, icons etc. indicate to the user the status of the apparatus, the operational possibilities etc. as well as further information such as statistical data concerning lapsed sessions etc. The user may for example view the display using a mirror when the apparatus is worn on the head. In this case the information shown on the display may be a mirror image, i.e. laterally reversed for the user's convenience.

[0065] The invention also relates to a method of monitoring muscle activity, said method comprising the steps of

[0066] providing signals indicative of muscle activity, for example EMG-signals,

[0067] processing of said signals in order to detect a particular activity, said processing of said signals taking into consideration specific individual parameters and/or references, and

providing a feedback signal in case a particular activity has been detected.

[0068] Hereby it is achieved that the method in accordance with the invention can be used for detecting and prevention of undesired activities such as bruxism, movements that are damaging or unwanted etc, as the detection can be performed with great certainty since the individual parameters of the user are utilized for laying down reference values, threshold values, criteria for triggering of feedback signals etc., which may take place at a special set-up procedure

[0069] Preferably, as specified in claim 21, said feedback is provided on the basis of an evaluation comprising a maximum force calculation, an area calculation and/or a pattern recognition process on the basis of a FFT-processing (Fast Fourier Transform).

[0070] Further, the invention also pertains to a method of setting up an apparatus according to one or more of claims 1 to 19, whereby [0071] an essentially maximal muscle activity such as a maximal jaw clenching is performed and the corresponding muscle activity is sensed and registered, [0072] one or more predefined muscle activities is/are performed, e.g. grimaces, and the corresponding muscle activity is sensed and registered, and [0073] a threshold value for outputting of a feedback-signal is adjusted.

[0074] Hereby it is achieved that the expected maximal level of activity as well as normally occurring muscle activities may be registered by the apparatus, which may be utilized for establishing criteria for releasing a feedback to the user in such a manner that the criteria is adapted to the user and in such a manner that the normally occurring activities cannot trigger a feedback.

[0075] Further, the invention relates to a method of setting up an apparatus according to one or more of claims 1 to 19, possibly subsequent to a setting-up procedure in accordance with claim 22, whereby

[0076] said method comprises the steps of using the apparatus in a set-up mode, whereby values and/or parameters corresponding to individual muscle activities are registered and possibly stored for one or more periods of time, and

[0077] whereby said registered and/or stored values and/or parameters are utilized for providing individual reference values for normal use of the apparatus.

[0078] Hereby the settings of the apparatus, e.g. the criteria for triggering a feedback, may

be fine-tuned and adapted to a higher degree to the particular user.

[0079] The invention also relates to use of an apparatus according to one or more of claims 1 to 19 and/or a method according to one or more of claims 20, 21, 22 or 23 for preventive treatment of bruxism.

[0080] Further, the invention relates to use of an apparatus according to one or more of claims 1 to 19 and/or a method according to one or more of claims 20, 21, 22 or 23 for corrective monitoring of human body positioning and/or movements.

[0081] Finally, the invention relates to use of an apparatus according to one or more of claims 1 to 19 and/or a method according to one or more of claims 20, 21, 22 or 23 for adjusting of human body positioning and/or movements during work activity.